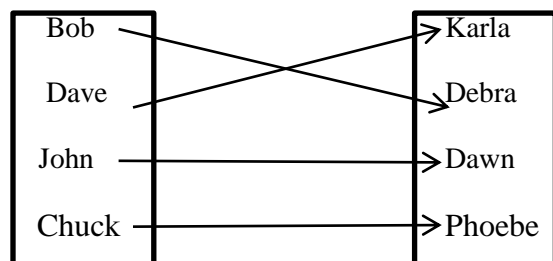


1.3 One-to-one Functions & Inverses

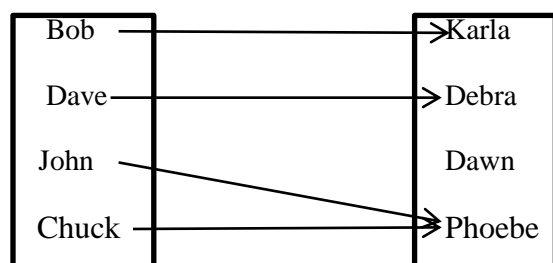
Name _____ Date _____ Period _____

In problems 1-4, determine whether the function is one-to-one.

1. Domain Range



2. Domain Range



3. $\{(-2, 5), (-1, 3), (3, 7), (4, 12)\}$

4. $\{(1, 2), (2, 8), (3, 18), (4, 32)\}$

In Problems 5-8, find the inverse of each one-to-one function. State the domain and the range of each inverse function.

5. Title Domestic Gross (in millions)

Star Wars	→ \$461
Star Wars: Episode 1-	→ \$431
The Phantom Menace	
E.T. the Extra Terrestrial	→ \$400
Jurassic Park	→ \$357
Forrest Gump	→ \$330

6. State Unemployment Rate

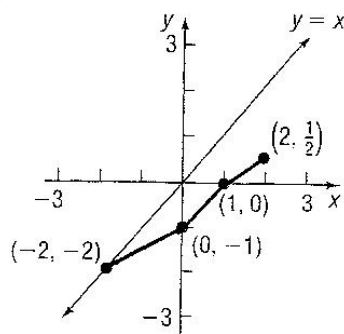
Virginia	→	11%
Nevada	→	5.5%
Tennessee	→	5.1%
Texas	→	6.3%

7. $\{(-2, 2), (-1, 6), (0, 8), (1, -3), (2, 9)\}$

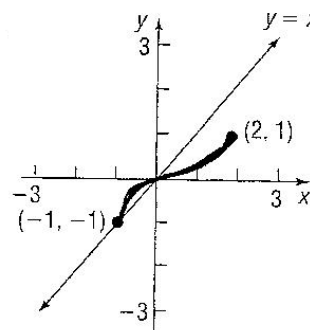
8. $\{(-2, -8), (-1, -1), (0, 0), (1, 1), (2, 8)\}$

In Problems 9-10, the graph of a one-to-one function f is given. Draw the graph of the inverse function f^{-1} . (The graph of $y = x$ is also given.)

9.



10.



In Problems 11-18, the function f is one-to-one. Find its inverse and check your answer. Show work!

11. $f(x) = 3x$

12. $f(x) = 4x + 2$

13. $f(x) = x^3 - 1$

14. $f(x) = \frac{1}{x-2}$

15. $f(x) = x^2 + 4$

16. $f(x) = \frac{3x}{x+2}$

17. $f(x) = -\frac{3x+1}{x}$

18. $f(x) = \frac{2x-3}{x+4}$

19. Use the graph $y = f(x)$, in Problem 9 to evaluate the following:

a) $f(2)$

b) $f(1)$

c) $f^{-1}(0)$

d) $f^{-1}(-1)$

20. If $f(7) = 13$ and f is one-to-one, what is $f^{-1}(13)$?